Plant Pathology Circular No. 391
September/October 1998

Fla. Dept. Agric. & Consumer Services
Division of Plant Industry

Xanthomonas Leaf Spot of Croton[1]

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INTRODUCTION: Croton, *Codiaeum variegatum (L.)* Blume var. *pictum* (Lodd.) Mull. Arg., is native to South India, Ceylon (Sri Lanka), Malaya (Malaysia), and Sunda Islands (Indonesia), according to Graf (1974). Everett (1982), however, states that the exact origin is unknown, but is likely the East Indies. These shrubs grow to 8 feet or more with highly ornamental leaves, variegated in beautiful colors of greens, whites, yellows, oranges, and pinks to shades of red (Graf 1974; Bailey 1978; Huxley 1992). Croton is grown as attractive specimen plants or hedges in south Florida (Zone 10), and is used as foliage plants in dish gardens, terrariums, and as floor plants (Chase 1997; Broschat and Meerow 1991).

A previously undescribed leaf spot was first reported in the spring of 1984 in Central Florida (Chase 1985). A yellow bacterium was consistently isolated from the diseased leaves and was identified as *Xanthomonas axonopodis* pv. *poinsettiicola* (Patel, Bhatt, and Kulkarni 1951) Vauterin, Hoste, Kersters, and Swings 1995 (formerly X *campestris* pv. *poinsettiicola* (Patel, Bhatt, and Kulkarni 1951) Dye 1978. This same pathogen also causes leaf spots on poinsettia *(Euphorbia pulcherrima* Willd. ex Klotzsch) and crown-of-thorns *(Euphorbia milli* Des Moul.), also members of the plant family *Euphorbiaceae* (Chase 1985).

SYMPTOMS AND DISEASE DEVELOPMENT: Foliar infection starts as tiny water-soaked areas that can rapidly enlarge to 3 mm or more (Fig. 1). They tend to remain confined to the areas between leaf veins and are wet and dark brown or black when well developed (Fig. 2). Most spots exhibit an irregularly shaped border, which is corky and especially visible on leaf undersides (Chase 1997). There was a variation in cultivar susceptibility among those tested by Chase. They varied from low susceptibility for 'Norma' and 'Petra' to high disease levels for 'Gold Finger', 'Gold Dust', and 'Gold Star' (Chase 1985).

Fig. 1. Xanthomonas leaf spot of croton showing water-soaked spots.
DPI Photo Credit: Jeffrey W. Lotz.

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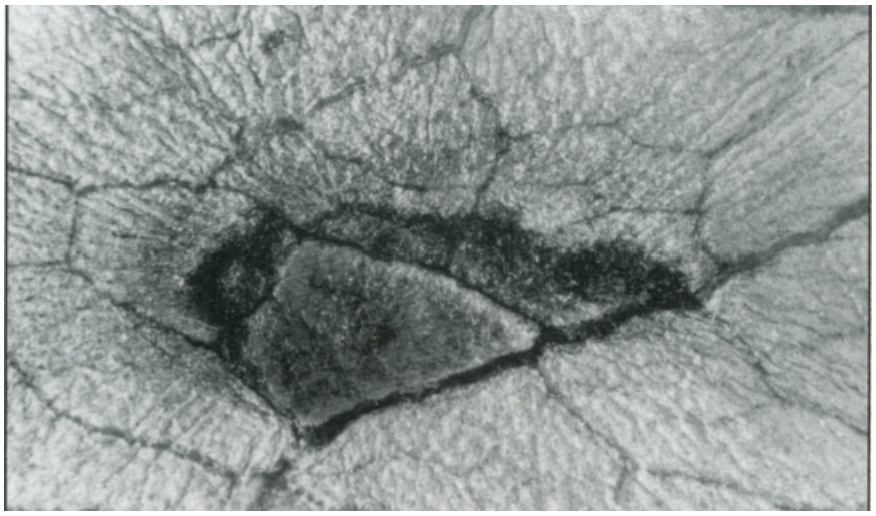

Fig. 2. Close-up of Xanthomonas leaf spot of croton shows vein-delimited spots with irregular water-soaked margin. DPI Photo Credit: Jeffrey W. Lotz.

CONTROL: Eliminate all stock plants that have symptoms of Xanthomonas leaf spot. The disease is difficult to control unless plants are produced without overhead watering or exposure to rainfall (Chase 1997). Copper sulfate pentahydrate (Phyton 27®) and cupric hydroxide (Blue Shield DF, Kocide LF, 2000, DF, and 101®) are registered for bacterial spots on foliage plants. Also, fosetyl aluminum (Aliette®) is registered for use on shrubs (Simone *et al.)* and is effective against most Xanthomonas leaf spots. Control measures should also include poinsettia and crown-of-thorn to avoid spread from one crop to the next (Chase 1985).

SURVEY AND DETECTION: Look for tiny, water-soaked areas that enlarge to vein-delimited gray to black spots with or without water-soaked margins.

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PI-98T15